

# Positive school climate helps students achieve positive results



**By Sheldon Rothman  
& Julie MacMillan**

Sheldon is a senior Research Fellow at ACER and director of the LSAY project. Julie is a Research Fellow and is involved in the LSAY project.

## The Longitudinal Surveys of Australian Youth (LSAY)

*The findings are based upon data on more than 27,000 Year 9 students and 600 schools. The students were in Year 9 in 1995 or 1998, and took part in the Longitudinal Surveys of Australian Youth (LSAY).*

*As part of the study, students took a reading comprehension test and a mathematics test, and completed a questionnaire that provided other student background information. The questionnaire included items that describe students' quality of school life, such as 'My school is a place where I feel happy' and 'My school is a place where I feel safe and secure'. A positive school climate was measured by students' responses to these items.*

A recent ACER study of Year 9 students' results on reading comprehension and mathematics tests found that a positive school climate is associated with higher literacy and numeracy test scores. Socioeconomic status (SES), language background, Indigenous status, gender and educational aspirations were also found to have significant effects on achievement in both literacy and numeracy. Parents' education had a significant effect on literacy but not on numeracy.

These findings, released in December 2003, were contained in a report, *Influences on achievement in literacy and numeracy*. Three sets of questions formed the basis of the report.

- What factors contribute to differences in literacy and numeracy achievement among Year 9 students in Australian schools? Are these factors the same as factors that have been found to contribute to literacy and numeracy achievement in other studies, from Australia and overseas?
- How much of the variation in student achievement in literacy and numeracy can be attributed to differences between students and how much can be attributed to differences between schools?
- How much of the overall variation in school achievement in literacy and numeracy can be explained at both the student and school levels?

### Factors associated with literacy and numeracy achievement

An important finding in the study was that schools with a positive school climate achieved higher average scores on tests of reading comprehension and mathematics, suggesting a positive link between a school's climate and the achievement of its students. Schools that work to develop a positive climate may also develop greater academic achievement in their students.

The socioeconomic status (SES) of students was found to have a major influence on their achievement. SES influenced achievement in two ways. First, schools with a higher level of SES also scored higher on the tests. Second, students from higher SES families scored higher on the tests, regardless of the school they attended.

Parents' education levels were associated with students' reading comprehension test scores, but not mathematics test scores. Year 9 students whose fathers had completed some form of post-secondary education had higher reading scores than those whose fathers did not. Among the Year 9 class of 1998, students whose mothers had completed secondary school also had higher reading scores.

Language background had differential effects on student's achievement scores. On average, students had lower reading comprehension scores if they were from a language background other than English (LBOTE), but in mathematics there were no significant differences. Both reading comprehension and mathematics scores were influenced by the percentage of LBOTE students in the school, although the

effect for mathematics was about half the effect for reading.

Indigenous Australian students scored consistently lower than non-Indigenous students on tests of reading comprehension and mathematics, even after SES and other factors were considered.

Gender was shown to influence both literacy and numeracy achievement levels, but in opposite directions. Females scored higher than males in reading comprehension, while males scored higher than females in mathematics.

Educational aspirations were associated with achievement levels. Students with plans to complete Year 12 achieved higher scores in both reading comprehension and mathematics. Students who planned to attend university achieved even higher scores on both tests, approximately twice the effect of plans for Year 12 completion.

### How much could be explained?

Approximately one-sixth of the variation in scores on tests of reading comprehension and mathematics could be attributed to differences between schools, and the remaining five-sixths to differences between students. This is consistent with findings for Australian students who participated in international studies of student achievement.

A little more than one half of the differences between schools could be explained by differences in the student composition – school socioeconomic status (SES) and the proportion of students from language backgrounds other than English in the school – and the school climate. By far the greatest influence on between-schools differences was the school's average socioeconomic status.

Far less of the within-schools variance could be explained. The influences on literacy and numeracy achievement described above accounted for a little more than 10 per cent of the differences between students.

### Implications

There are a number of policy implications from this study. First, as already noted, schools that work to develop a positive climate may also develop greater academic achievement in their students.

The data reported here suggest that the schools with larger proportions of low-SES

students experience lower achievement scores, and that schools with larger proportions of high-SES students experience higher scores. As such, programs that provide greater school enrolment choices for children from low-SES families may assist in an increase in achievement scores.

Alternatively, schools that serve students from low-SES families may benefit from school-wide programs that ameliorate the effects of poverty, especially programs that emphasise literacy and numeracy achievement.

Finally, the magnitude of the differences in achievement test scores between Indigenous and non-Indigenous students indicates that much work is still required to increase literacy and numeracy achievement among Indigenous Australians. Literacy and numeracy programs are required not only in the early years of schooling but through the middle years as well.

Literacy and numeracy remain at the top of the agenda for Australian education, so it is imperative that researchers continue to examine the literacy and numeracy skills of Australian school students and understand better why some students achieve higher levels than other students. Understanding the influences on students' achievement in literacy and numeracy remains a major topic for education research in Australia. In turn, ensuring that all students, regardless of background, are literate and numerate must be a primary goal for Australian educational policy makers.

Further information can be found in the report, *Influences on achievement in literacy and numeracy*, by Sheldon Rothman and Julie McMillan. This is research report number 36 in the Longitudinal Surveys of Australian Youth (LSAY) research program, which is jointly managed by ACER and the Commonwealth Department of Education, Science and Training (DEST). The report and other information on the LSAY program are available at [www.acer.edu.au](http://www.acer.edu.au) ■